

Primary care and the early phases of schizophrenia in the Czech Republic

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SUMMARY. **Aim** – To explore knowledge, treatment setting, attitudes and needs associated with patients in early phases of psychosis among general practitioners (GPs) in Prague, and to compare results with GPs from 6 countries participating in the *International GP Study (IGPS) on Early Psychosis* (Canada, Australia, New Zealand, England, Norway, Austria). **Methods** – Survey questionnaires were mailed to 648 GPs in the city of Prague. **Results** – The response rate was 19.9%. Prague GPs showed significantly lower diagnostic knowledge of early phases of psychosis compared to their international colleagues. They frequently indicated depression/anxiety and somatic complaints as early warnings of psychosis. They more often considered their behaviour to be problematic and more commonly handed them over to specialists. The majority of Prague GPs wished specialized outpatient services for low-threshold referrals of such patients. **Conclusions** – Along the mental health reforms in the Czech Republic which emphasis the role of primary care, GPs' knowledge of the early warning signs of psychosis needs to be improved.

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NEED FOR CLOSURE

Schizophrenia is among the most disabling and costly diseases (Wu *et al.*, 2002; Kessler *et al.*, 2009). However, recent studies have demonstrated that a substantial proportion of individuals with schizophrenia do not receive any treatment (Saxena, 2008; Thornicroft, 2008). Subsequently, one of the major goals in psychiatry over the past two decades was to define the early phases of schizophrenia in order to model specific intervention strategies

(Miller *et al.*, 1999). Several studies suggest that intervention in the early phases of schizophrenia may improve its further course or even prevent a full-blown first psychotic episode (Larsen *et al.*, 2006; Ricciardi *et al.*, 2008).

Early intervention, however, requires early recognition of psychotic patients or patients at increased risk for developing psychosis. Analyses of the help-seeking pathways of these patients consistently identified general practitioners (GPs) as the most often contacted health professionals (Skeate *et al.*, 2002; Platz *et al.*, 2006). This emphasizes the important role of GPs along the early course of schizophrenia.

Between 2003 and 2005, the International Study on GPs and Early Psychosis (IGPS) was conducted among 11 sites in 7 countries (England, Norway, Austria, Canada, Australia, New Zealand and Czech Republic) and sampled 2784 GPs (Simon *et al.*, 2009). This study was an extension of a Swiss study among 1089 GPs

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(Simon *et al.*, 2005) that was carried out in 2001/02. Among the participating sites in the IGPS, Prague was the only one representing former Eastern Europe.

Compared to the other sites, the role of GPs in the Czech Republic has undergone dramatic changes during the last century. Despite the country's close political, economic and cultural ties with the West, the health care system changed dramatically after World War II and under the regime of the former Soviet Union (USSR). The prevailing health care system, called the Semashko health care system, became then a centralised, tax-based, health care system with physicians as salaried state employees. There was a strong focus on specialist and hospital care in this system, and subsequently, the Western type of GPs who give comprehensive and continuing care to an individual did not exist in the former system (Grielen *et al.*, 2000). Due to 'underfunding' and to the 'iron curtain', new medical technologies were hardly ever available, and then merely for the politically privileged (Krizova & Simek, 2002). A large survey in 1993/94 among 7233 GPs from 30 European countries, including 12 Eastern European countries, revealed that the latter were strongly influenced by the USSR, resulting in very low task profiles of GPs (Boerma *et al.*, 1997). However, compared to countries that formed an integral part of the Soviet Union for more than 50 years, i.e. Ukraine, Estonia, Latvia, and Lithuania, GPs in countries from the former Austro-Hungarian Empire, i.e. the Czech Republic, Slovakia and Hungary, still had higher task profiles. The situation changed again after the fall of the Soviet and communist regimes in 1989, and a major reform of the health system was introduced in the early 90s, where the development of general practice was a common aim (Jack *et al.*, 1997). However, GPs in the true sense still do not exist. The doctors that most closely resemble the Western European GPs are the 'generalists', a term which may mirror their original specialisation in general medicine. However, they do not have a gate-keeping function (Grielen *et al.*, 2000) and the range of their medical tasks is limited (Boerma *et al.*, 1997). Thus, the Czech GP model substantially differs from the Western GP model represented by the other IGPS sites.

The present paper aimed at comparing GPs in the Czech Republic with their international colleagues sampled in the IGPS. Against the above summarized background, we expected Czech GPs to be less familiar with recognizing and dealing with beginning schizophrenia. Thus, we hypothesized that they showed lower diagnostic knowledge than GPs from the other IGPS sites, and that they more often refer patients with suspected early psychosis to specialists.

As the mental health system in the Czech Republic is changing under the new reforms with development of primary care being a central focus, and early intervention in psychosis has simultaneously become one of the cornerstones of modern psychiatry, exact knowledge on GP characteristics is pivotal before specialized services for early psychosis are being developed and embedded in this particular health system.

METHODS

Study Design

The design of the International GP Study on Early Psychosis (IGPS) has been previously reported in detail (Simon *et al.*, 2009). In summary, 11 sites across 7 countries participated in the IGPS. These were: England, Norway, Austria (Vienna, Kärnten), the Czech Republic, Canada (Toronto, Montreal, Ottawa), Australia (Melbourne, Sydney), and New Zealand (South Island). The postal surveys in these sites were conducted between 2003 and 2005 and were questionnaire-based (see below). In order to identify potential errors in data entry at all sites, 30 percent of the data were entered twice. Rates of discrepancy between index and control cases were then calculated for each variable. If the error rate for a particular variable exceeded 10%, the site was asked to re-check the originally entered data against the data on the returned questionnaire for that particular item. In addition, the data in all variables were checked for implausible entries.

The survey in the Czech Republic was conducted in the city of Prague. The addresses of all study participants had been identified from a list that was updated in 2002 of all registered generalists in the Prague catchment area (Association of General Practitioners in Czech Republic; <http://www.splcr.cz>). The questionnaires were sent out to 741 GPs in a first wave in May 2003. The same questionnaire was sent to the same GPs in order to increase response rate in June 2003, however the second wave consisted of 648 letters due to incorrect addresses, retirement or refusal of 93 GPs to participate. A coding system (the day and the year of birth of their mother, the day of birth of their father, as well as their own gender) was developed to enable matching of GPs responding in both survey waves. This coding system conformed to the criteria of anonymity and was approved by the Eidgenössisches Büro für Datenschutz [Federal Office of Data Protection] of a survey that was previously conducted in Switzerland and was the forerunner of the IGPS (Simon *et al.*, 2005).

Despite the above mentioned differences between the traditional concept of GPs and generalists in the Czech Republic, we chose the unitary term GP for the present paper.

Questionnaire

The 24-item questionnaire (see Simon *et al.*, 2009) was a slightly modified version of the valid and reliable questionnaire used in 2001 in the Swiss survey (Simon *et al.*, 2005). Content and format was agreed upon by all primary IGPS investigators at a consensus meeting in 2003. The questionnaire consisted of two demographic items and 22 (partly multi-item) questions which assessed the following aspects:

- 1) The number of patients seen with a formal diagnosis of schizophrenia and those who they suspected to be in early phases of schizophrenia (6 questions);
 - 2) Treatment options (5 questions);
 - 3) Detection and treatment of early psychosis (4 questions);
 - 4) Treatment and Prognosis of schizophrenia (4 questions) and
 - 5) The value of early intervention (3 questions).
- Additionally, each site was allowed to add up to 5 'site-specific' questions at the end of the questionnaire.

The questionnaire was translated into Czech language by professionals and then back-translated into German by another professional to ensure that cultural and linguistic idioms did not affect the meaning of each item. The questionnaires were anonymous. The local law did not require the study to be approved by the local ethics committee.

Analysis

Data were analysed using the computer package SPSS Version 12. Calculation of a composite score of diagnostic knowledge was reported previously (Simon *et al.*, 2005). In summary, the composite score was calculated from the two multi-item questions covering diagnostic knowledge. AES and DU originally developed this scoring system for the Swiss questionnaire (Simon *et al.*, 2005) taking into account the evidence base on early signs of schizophrenia and what might be realistic to expect from GPs in terms of detecting these. The items were thus divided into three different score levels, ranging from 2 (highest score) to 0. The following items were

defined as score-2-items: social withdrawal, functional decline, family history, information from significant others and observation over several months.

Both prolonged social withdrawal and functional decline have frequently been reported in the early stages of schizophrenia (Häfner *et al.*, 1999). As patients in the early stages often deny both social withdrawal and functional decline, it is recommended to obtain information from significant others (Birchwood *et al.*, 1998). 'Observation over several months' was chosen because short observation intervals may fail to capture features such as social withdrawal and functional decline. Given its recognised association with an increased risk for schizophrenia, a positive family history was also rated as a score-2-item (Kety, 1987). Hallucinations, delusions and bizarre behaviour were rated as score-1-items. Albeit their importance in frank psychosis, these symptoms are not expected to be present in earlier phases of the disease. Further, suicidality, depression and anxiety, personal history as well as neuropsychological assessment were rated as score-1-items. All other items were score-0-items.

We calculated a core score (c-score) and a total score (t-score) for each GP. The c-score was constituted by the sum of all score-2 items and reflects the level of knowledge about the most important aspects in detecting someone in the early stages of schizophrenia. The t-score is the sum of all score-1 and score-2 items.

For the interest of an international readership, we chose to limit our analyses to comparisons of the most relevant issues between the Prague GP sample and GPs sampled in the IGPS. We further chose not to include any items endorsing treatment knowledge in our comparative analyses as Prague GPs were only allowed to prescribe a very limited selection of antipsychotics at the time when the survey was conducted, and, thus, any comparisons between GPs would be biased by strongly differing levels of prescription expertise that are imposed by mental health policies. Finally, it is important to note that the IGPS sample used for the present analyses as comparative group does not include the Prague GPs. Comparisons were calculated using χ^2 tests for categorical and t-tests for continuous variables.

RESULTS

Sample characteristics

A total of 129 GPs responded to the survey (108 GPs in the first wave and 21 in the second one) equalling a total response rate of 19.9%. Characteristics of the

Prague generalists that were sampled in the present study are shown in Table I. Compared to data provided by the Institute of Health Information and Statistics of the Czech Republic, a government organisation founded by Ministry of Health (<http://www.uzis.cz>), the study sample did not differ from the overall Prague generalists in

age ($p = 0.141$) and gender distribution ($p = 0.497$) and can therefore be considered representative of GPs practising in the city of Prague. Only 19% of GPs in Prague had started their clinical practice after the fall of communism in 1989 (14% in Czech Republic) when health care reforms were developed.

Table I – Characteristics of Prague GPs ($N=129$).

Gender, n (%)	
Male	31 (24.0)
Female	98 (76.0)
Age mean (\pm SD)	51.5 (10.0)
Years since graduation mean (\pm SD)	26.0 (9.5)
Patient load, mean (\pm SD)	
Suspected early psychosis per year	2.1 (1.4)
Treatment system in suspected schizophrenia, n (%)	
Treatment only in GP's Practice	1 (0.8)
Collaboration with specialists	22 (17.1)
Total referral to specialists	104 (80.6)
No reply	2 (1.6)
Difficulties with patients (suspected schizophrenia), n (%)	
No difficulties	23 (17.8)
Some difficulties, but continued treatment in own practice	26 (20.2)
Due to difficulties no treatment in own practice	73 (56.6)
No reply	73 (56.6)
Prognosis of treated patients after first episode of schizophrenia, n (%)	
May be favourable	62 (48.1)
Several episodes with possible maintenance	32 (24.8)
Progressive decline	24 (18.6)
No reply	11 (8.5)
Possibility of targeted early intervention, n (%)	
Not possible	30 (23.3)
Occasionally possible	87 (67.4)
In most cases possible	6 (4.7)
No reply	6 (4.7)

Compared to their international colleagues, Prague GPs saw fewer patients where they suspected a beginning schizophrenia ($\chi^2=27.11$, $df=3$, $p<0.001$), more often completely handed over these patients to specialists ($\chi^2=127.2$, $df=2$, $p<0.001$), and more commonly judged their behaviour to be problematic ($\chi^2=104.58$, $df=2$, $p<0.001$). Czech GPs more often esteemed prognosis of a treated patient after a first schizophrenic episode as unfavourable ($\chi^2=18.07$, $df=2$, $p=0.003$), and, at trend level, more commonly judged targeted early detection prior to a first episode of schizophrenia as impossible ($\chi^2=9.8$, $df=2$, $p=0.08$).

Of 105 GPs who responded to the question about their needs and wishes in assessing/treating patients with suspected beginning schizophrenia, 24 (22.9%) wished more

continuous medical education (IGPS: 34.1%), 27 wished the availability of mobile teams (IGPS: 29.6%), and 53 (50.5%) wished specialized outpatient services for low-threshold referrals (see Figure 1).

Comparisons of diagnostic knowledge between the Prague and IGPS samples are presented in Table II. Prague GPs had significantly lower c - and t -scores than their international colleagues. Prague GPs significantly less often identified three of the five score-2-items: social withdrawal, decline in social functioning, and information from significant others. Also, they significantly under identified hallucinations, delusions and bizarre behaviour. In contrast, they significantly more often indicated depression, anxiety, psychosomatic complaints and dizziness as early warning signs of beginning schizophrenia (Figure 2).

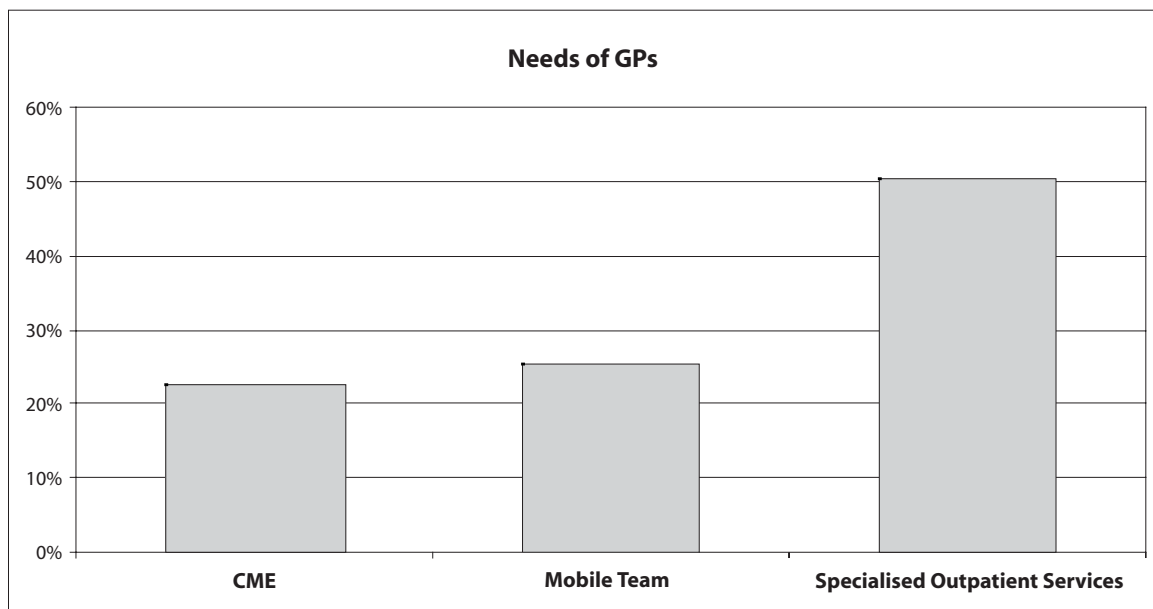


Figure 1 - Needs of Prague GPs in the treatment of patients with early stages of schizophrenia.

Table II – Diagnostic Knowledge of GPs.

	Prague	IGPS	p
Schizophrenia is preceded by early warning signs	83.7%	91.3%	<.001
Score-2-items ¹			
Social withdrawal	55.0%	79.1%	<0.001
Decline in social functioning	51.2%	63.2%	0.006
Family history	69.8%	72.7%	0.469
Information from significant others	63.6%	73.5%	0.013
Observation over several months	17.8%	17.4%	0.909
Score-1-items ¹			
Hallucinations/Delusions	55.8%	67.8%	0.005
Suicidality	14.0%	14.1%	0.952
Depression/Anxiety	67.4%	42.6%	0.001
Bizarre behaviour	36.4%	73.2%	0.001
Personal history	69.8%	78.3%	0.22
Neuropsychological assessment	6.2%	15.4%	0.004
Score-0-items ¹			
Psychosomatic complaints	56.6%	23.6%	0.001
Drug abuse	22.5%	39.1%	0.001
Conflicts w/i parents/teachers/employers	35.7%	45.1%	0.34
Sleeping difficulties	35.7%	33.3%	0.584
Light-headedness/Dizziness	13.2%	2.3%	0.001
Observation over several days and weeks	43.4%	41.5%	0.661
Neurological assessment	24.8%	26.5%	0.669
Other examinations (e.g. EEG)	6.2%	9.7%	0.188
Laboratory tests	23.3%	35.0%	0.006
Urine toxicology	17.1%	16.7%	0.912
Consultation with/referral to specialist	69.0%	84.0%	0.001
Direct questioning of patient about symptoms	51.9%	68.9%	0.001
c-score mean (±SD)	5.48 (2.31)	6.29 (2.25)	0.001
t-score mean (±SD)	8.81 (2.25)	9.81 (2.72)	0.001

¹percentage of GPs who indicated this item to be important in beginning schizophrenia.

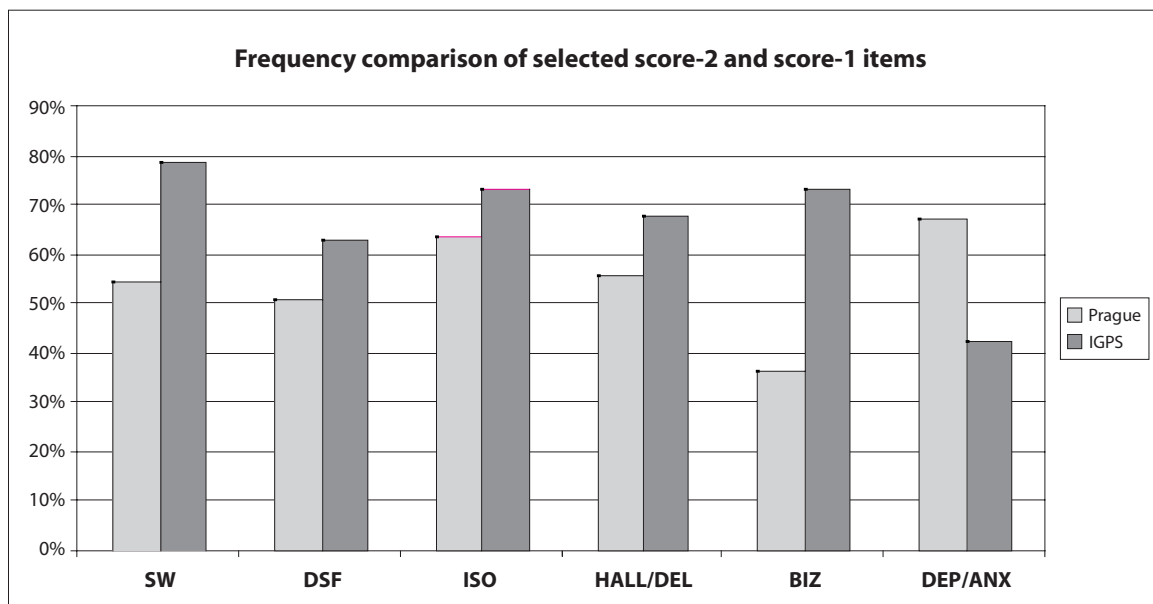


Figure 2 - SW: social withdrawal; DSF: decline in social functioning; ISO: information from significant others; HALL/DEL: hallucinations, delusions; BIZ: bizarre behaviour; DEP/ANX: depression, anxiety.

DISCUSSION

In the present study, we compared diagnostic knowledge, treatment setting, attitudes and needs of a representative sample of GPs from Prague/Czech Republic with GPs from 6 other countries (England, Austria, Norway, Canada, Australia, New Zealand) with regard to patients with suspected beginning schizophrenia.

The results confirmed our hypothesis that in comparison to their international colleagues representing a Western GP model, GPs in Prague showed significantly more deficits in diagnostic knowledge. While difficulties in identifying the insidious features of beginning schizophrenia have also been found both in the Swiss GP study (Simon *et al.*, 2005) and in the IGPS (Simon *et al.*, 2009), GPs in these two studies, however, showed good identification of positive symptoms such as hallucinations, delusional ideation and bizarre behavior. In contrast, Prague GPs not only under identified the insidious features, but also these positive symptoms of early psychosis.

Our hypothesis that Prague GPs rarely continue treatment of these patients, but prefer full handover to specialists, was also confirmed. Further, Prague GPs more often consider prognosis of patients with beginning schizophrenia as poor and judge their behaviour as prob-

lematic, which may partly explain their preference for complete handover to specialists when compared to their international colleagues.

These findings suggest a considerable unfamiliarity of GPs in dealing with psychotic disorders and partly reflect the particular changes of the GPs' role in the Czech Republic over the last century as mentioned earlier in this report. Despite reforms in the health system that were introduced since 1990 and that emphasized primary care, the role of GPs in the Czech Republic actually still is not comparable to the traditional model of GPs. The range of the GPs' tasks in the Czech Republic is very limited and focuses mostly on the treatment of physical problems (Grielen *et al.*, 2000). This may explain our additional finding that Prague GPs identified psychosomatic complaints as early warning sign of psychosis.

The finding that the majority of GPs in Prague completely handover patients with suspected beginning schizophrenia to specialists may also mirror their limited motivation to treat 'additional' patients - in particular those with mental disorders - in a system where GPs are paid on a pre-registered caseload. This attitude may even be furthered by the fact that psychiatrists do not encourage GPs to take on patients with psychiatric problems and strong governmental restrictions prevail on GPs with

regard to the range of antipsychotic medication that they are allowed to prescribe (Raiter *et al.*, 2004).

The historical considerations demonstrate the considerable gap between primary and secondary care that has prevailed over many decades in the Czech Republic and that has resulted in the detachment of mental health issues from 'primary care'. This may account for some of the significant differences in knowledge about psychosis between Prague GPs and their Western colleagues. In 2001, however, the Ministry of Health approved to a new concept of psychiatric care developed by the Czech Psychiatric Association (Raboch *et al.*, 2005). Subsequently, GPs in Prague have been included in a comprehensive educational program on mood and anxiety disorders in recent years, and the range of antidepressants that GPs are allowed to prescribe has expanded over recent years. This development seems to be very well mirrored by the finding that Prague GPs frequently identify depression and anxiety as early warning sign of beginning schizophrenia. Although affective symptoms have a high prevalence in the early course of schizophrenia (Häfner *et al.*, 1999), their specificity is low, as depression - and anxiety - has a high prevalence in general population as well as in several other psychiatric disorders. Nevertheless, the high identification rate of depression by the GPs in Prague reveals that it was generally possible to sensitize them about mental disorders and is an encouraging result, as it suggests that GPs can successfully be educated about early psychosis even in a system where the actual role as GP had been omitted for several decades.

In summary, our study highlights that GP education must be modeled according to the prevailing health system, and that results from studies such as the IGPS cannot be applied to any other country without considering the historical and political issues. Compared to the wealth of growing early psychosis services throughout the world, Eastern European countries still can only rely on a few isolated projects that investigate this field (Edwards *et al.*, 2000). The unfamiliarity with such services is mirrored by fewer GPs in Prague wishing a specialized, low threshold referral and consultation service as compared to GPs in the other participating countries in the IGPS (50.5 % vs. 71.46%). However, the need for such outpatient services was still more than twice as often indicated than the need for CME.

The Czech Republic health system has emphasized the importance of primary care in its reforms following the fall of the Soviet and the communist regimes. It must therefore be expected that the function of actual GPs will be reinstalled. As a direct consequence, the role of GPs in

the Czech Republic in the early recognition of patients at risk for schizophrenia may become as important as in Western European countries. This warrants appropriate education of GPs taking into account the specific results of the present study.

This study has a number of limitations. The response rate was relatively low at 19.9%, although this was similar to the IGPS survey (22.2%) (Simon *et al.*, 2009) and to a recent survey among French GPs (Verdoux *et al.*, 2006). This may reflect the time taken to complete the relatively lengthy and comprehensive survey. As it must be suggested that respondents may have had a particular interest in mental health, level of knowledge of non responders may even be lower. Such issues must also be raised considering that the survey was performed in the capital city of the Czech Republic with its long-standing tradition of university medicine, suggesting even larger deficits in GPs practising in other regions of the country. Further, the questionnaire responses assess stated rather than actual behaviour, and should therefore be considered a 'proxy' measure of intended behaviour (Penn & Corrigan, 2002). Finally, the present findings of GPs in the Czech Republic cannot automatically be applied to other Eastern European countries either, all the more because not only primary care, but also mental health follows different models (Balicki *et al.*, 2000, Tringer, 1999, Tomov, 2001, Füredi *et al.*, 2006, Pawlowski & Kiejna, 2004).

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